

## REMARKS

In the Office Action mailed July 1, 2004, the Examiner noted that claims 1-40 were pending, objected to claims 9-12, 15, 20 and 21 and rejected claims 1-8, 13, 14, 16-49, 22, 23 and 25-40. Claims 2, 5-7, 9, 10, 15, 20, 21, 26, 29-31, 33 and 35-38 have been amended, and, thus, in view of the forgoing claims 1-40 remain pending for reconsideration which is requested. No new matter has been added. The Examiner's [rejections and objections] are traversed below.

In the Office Action the Examiner objected to claims 9-12, 15 and 20-21 and indicated that these claims would be allowable if rewritten in independent form. These claims have been so rewritten and it is submitted that these claims have not been narrowed and have the same scope as prior to being made independent and are now allowable. Withdrawal of the objection is requested.

Page 2 of the Office Action rejects claims 1-8, 13, 14, 16-19, 22, 23 and 25-40 under 35 U.S.C. § 103 over Nako. Page 4 of the Office Action rejects claim 24 under 35 U.S.C. § 103 over Nako and Weng.

Nako is directed to correcting skew type distortion when imaging book like documents. In correcting the skew, Nako performs edge detection in the scanned image to detects an edge of the document using the scan table frame as a reference. Skew is detected by searching for a seam line and determining the difference between an angle of the seam line and the edge detected for the edge of the paper. A rotational correction for the skew is then determined and the skew is corrected. The system also corrects distortion associated with height and magnification changes.

In contrast, the present invention of claims 1, 25, 32, 39 and 40 uses regular graphics on the image of the paper to determine or estimate a 3D curved surface model of the shape of the paper. This 3D model is then used to correct the distortion. Nako does not teach or suggest such.

The invention of claims 3, 27 and 34 uses horizontal and vertical lines on the piece of paper to estimate the 3D model used for correction. Nako does not teach or suggest such either.

The invention of claims 4, 28 and 35 uses horizontal and vertical character strings on the piece of paper to estimate the 3D model used for correction. Nako additionally does not teach or suggest such.

The invention of claims 2, 26 and 33 uses the outline of the piece of paper to estimate the 3D model used for correction. Nako also does not teach or suggest such. Additionally these claims emphasize use of a vertical and horizontal line energy function and where the energy is a minimum to specify the 3D model. Nothing in Nako teaches or suggests this.

The invention of claims 5, 29 and 36 emphasize evaluating outline likeliness using a ratio of pixel strings with gradation of an external area of the paper and pixel strings with gradation of an internal area. Nothing in Nako teaches or suggests this.

The invention of claims 6, 30 and 37 claims emphasize use of a vertical and horizontal line energy function and where the energy is a minimum to specify the 3D model. As noted above, nothing in Nako teaches or suggests.

The invention of claims 7, 31 and 38 uses the outline of the piece of paper to estimate the 3D model used for correction. Nako also does not teach or suggest such. Additionally these claims emphasize evaluating outline likeliness using a ratio of pixel strings with gradation of an external area of the paper and pixel strings with gradation of an internal area. As noted above, nothing in Nako teaches or suggests this.

Nothing in Weng teaches or suggests the features of the claims discussed above.

It is submitted that the invention of independent claims distinguish over the prior art and withdrawal of the rejection is requested.

The dependent claims depend from the above-discussed independent claims and are patentable over the prior art for the reasons discussed above. The dependent claims also recite additional features not taught or suggested by the prior art. For example, claim 13 emphasizes modeling a a sunken center-folded three-dimensional curved-surface. Nothing in the prior art teaches or suggests this. It is submitted that the dependent claims are independently patentable over the prior art.

It is submitted that the claims are not taught, disclosed or suggested by the prior art. The claims are therefore in a condition suitable for allowance. An early Notice of Allowance is requested.

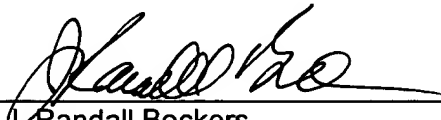
Serial No. 09/819,728

If any further fees, other than and except for the issue fee, are necessary with respect to this paper, the U.S.P.T.O. is requested to obtain the same from deposit account number 19-3935.

Respectfully submitted,

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